

**THE SPIDER *OECOBIUS CONCINNUS* SIMON (ARANEAE: OECOBIIDAE) IN NESTS OF THE ANT *POLYRHACHIS AUSTRALIS* MAYR (HYMENOPTERA: FORMICIDAE) IN TOWNSVILLE, QUEENSLAND: A NEW DISTRIBUTION RECORD**

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### Abstract

The pantropical spider *Oecobius concinnus* Simon is newly recorded from Townsville in Queensland, where it associates with the formicine weaver ant *Polyrhachis australis* Mayr, probably feeding on the ants' brood.

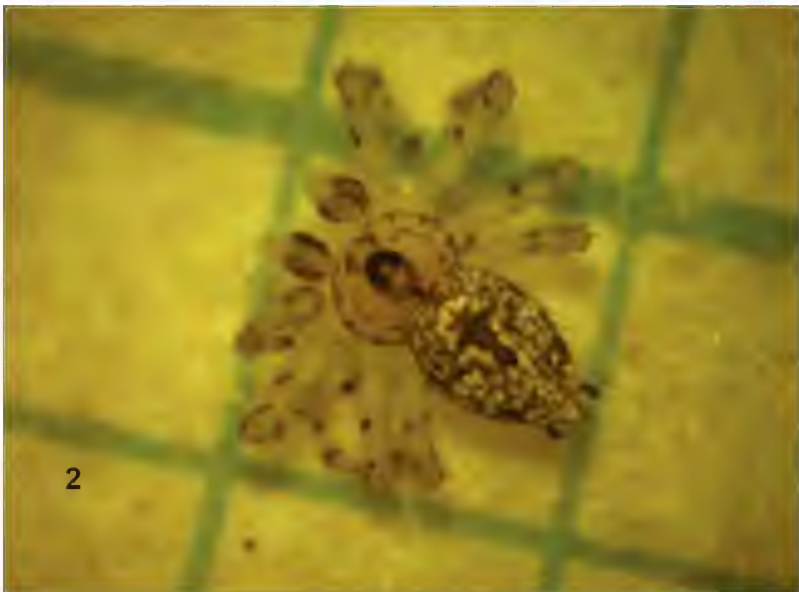
### Introduction

Spiders of the genus *Oecobius* Lucas are tiny and move swiftly, so it is not surprising that our knowledge of their distribution is fragmentary and biased in favour of urban locations. *Oecobius concinnus* Simon, 1892 is a pantropical species whose occurrence in Australia has to date been noted only for limited locations in the Northern Territory (Framenau *et al.* 2014). Precise specimen records are available on the OZCAM (2015) website for specimens collected in Berrimah, Darwin (12.413S, 130.912E) and Kapalga, West Arnhem Land (Kakadu National Park, at 12.383S, 132.3E (Site B) and 12.7S, 132.367E (Naramu Camp)). Here we record its presence in Townsville, Queensland where, besides occurring in its familiar synanthropic haunts, it was found to associate closely with the formicine weaver ant *Polyrhachis* (*Cyrtomyrma*) *australis* Mayr, 1870. For a diagnosis of the subgenus *Cyrtomyrma* Forel, together with a species key and distributions, see Kohout (2006).

### Discussion

More than 400 *P. australis* nests were dissected as part of a six-year and ongoing study in Cranbrook, Townsville (19.302S, 146.751E) (Downes 2015). Arthropod nest associates were systematically recorded and included 18 specimens of *O. concinnus* collected in four of the six years (2011, 2013, 2014, 2015) in all months of the year except February, April and June and covering all stages of the free-living part of the spider's life cycle, *i.e.* juvenile, adult female (Fig. 1) and adult male (Fig. 2).

Spiders were found both inside and outside the nests and it can be inferred from other studies (Jackson and Nelson 2012, Garcia *et al.* 2014), as well as from the size (6 mm) and armour of the worker ants, that the spiders were feeding primarily, if not solely, on the ants' brood. However, it should not be concluded that *O. concinnus* is myrmecophagous by trophic habit, since by selecting ants the spiders are merely selecting the most commonly available prey (Voss *et al.* 2007, Líznavá *et al.* 2013).



**Figs 1-2.** *Oecobius concinnus*, dorsal view: (1) adult female; (2) adult male. Sizes indicated by the 2 mm graph paper background.

Nonetheless, the spider-ant association is unlikely to be simply fortuitous. One reason for this is that the ants' brood is only accessible to predators that have some mechanism preventing the worker ants from recognizing the intruder as alien. Another is that spiders of the genus *Oecobius* are typically sit-and-wait webspinners, not free hunters (Glatz 1967, Voss *et al.* 2007), so their operating base would seem to be the ants' nest. The spiders' own web retreats, if constructed, are presumably either integrated into the ants' nest or located close by. In this connection it is germane to note that the weaver ants also use spider silk, as well as silk from their own larvae, to construct their nests and line the interior (Dwyer and Ebert 1994).

The lateral and marginal cephalothoracic spots, used in part by Santos and Gonzaga (2003) in their diagnoses of *O. navus* Blackwall, *O. concinnus* and *O. marathaus* Tikader, would seem to be unreliable characters for species identification, given the clearly prominent elliptical laterals and triangular marginals of the Townsville specimens of *O. concinnus*. Structure of the male and female genitalia, as illustrated in Santos and Gonzaga (2003), remains the decisive diagnostic criterion. Adult female, adult male and juvenile specimens have been deposited in the Western Australian Museum, Perth.

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